Real Time Translation as a Service
AVIOS 2008

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Agenda

- Translation Focus in IBM
- Market view and business value
- Increasing accuracy with domains.
- Examples of real time collaboration
- A Translation Server and key attributes
- Wrap Up.
The IBM Innovation Jam

An Invitation from Sam Palmisano

More than 150,000 IBMers, family members, clients and university and business partners, representing 104 countries and 67 companies, came together in 2006 in InnovationJam, an online conversation on IBM’s worldwide intranet. They posted more than 46,000 observations and ideas for translating some of IBM’s most cutting-edge technologies into economic and societal value.

As a result, IBM has allocated up to $100 million to explore 10 promising new business opportunities.

Innovation Jam #3

REAL-TIME LANGUAGE TRANSLATION SERVICES

The opportunity: Despite global interconnectivity, language differences remain a significant barrier to expanded commerce and collaboration — in spheres ranging from healthcare to trade and travel. IBM will apply its market-leading automated translation technologies to a range of applications and environments that could be delivered seamlessly by many service providers over the Web.
Companies are looking to Translation to help them shift from being multinational to really global.

1. Gain Access to New Markets
With Globalization and in the global marketplace, companies must be able to gain access to new markets easily, and collaborate with far-flung employees, partners, and suppliers to provide innovative offerings that are relevant and valuable anywhere in the world.

2. Lower Costs
In addition to these challenges managing business communications today across geographies and language barriers has become increasingly time consuming, complex, and costly.

3. Improve Business Efficiencies
What is needed is a solution that will maximize business efficiency by communicating the right information to the right people at the right time to address specific business or personal challenges without language being a barrier. The integration of Speech and Translation technology helps to just that.

Business rank quick communication, increased productivity, lower costs and getting closer to customers…. all will benefit by real time multilingual communications.


Global Watch Tower- Real-Time Translation for Chat, SMS, and E-Mail
Donald A. DePalma 28 January 2008

“With growing multilingual populations at home and big markets abroad, the need for real-time interpretation and translation will grow quickly in hotlines, in call centers, for customer support, and for business and leisure travelers”
Domains are key to increasing translation accuracy.

**Domain** - topics of conversation that the system will recognize and translate

**Language Pairs** – source and target languages the system can translate between

**Examples**
- Military Support for English↔Arabic (Iraqi Dialect)
- Travel and Tourism for English↔Mandarin Chinese
- Emergency Medical for English↔North American Spanish
- Patient/Nurse’s Station for English↔North American Spanish

**The topic effects the meaning!**

- away distant
- aweigh just clear of the bottom
- billed has a bill
- build to construct
- Chile a South American country
- chili dried pod of red pepper
- chilly uncomfortably cool
- doc a physician
- dock where a boat is kept
- grease lubricant
- Greece Mediterranean country
- meat animal flesh
- meet to connect
- mete a boundary
Translation Improves Business Processes

Challenge
Provide support in native languages while reducing costs and increasing employee productivity.

Solution
Focus on enabling users to interact with contact center agents in real time by using real time multilingual chat.

Business Value
- Customer satisfaction, prioritizing their language and culture. Establishing trust.
- Reuse of critical skills across geographies and languages.

Contact Center

Step 1 - A person sends an instant message in their native language, making an inquiry. “What is the status of my mail server? How do I ...,?"

Step 2 - The initial response to an inquiry could be a bot using only one language. This saves costs. And the customer receives messages in their native language.

Step 3 - If not resolved, the session is passed to a live agent (along with the session communications) to help resolve the problem.

Step 4 - If the problem cannot be resolved via ST, the agent clicks and establishes a VoIP session.

Example Translation System
The back end system is based on English. The Server detects the incoming language when the message arrives and converts it to English.

Multiple Languages
Translation Improves Mobile Collaboration

**Challenge**
Communicate in real time critical information when traveling. Gain access to information. “What is the price of xxxx?

**Solution**
Cell phone as your personal translation device

**Business Value**
- Remove the language barrier for an individual.
- Leverage voice search investment and application across languages.

**Cell phone User**

1. “I need a doctor”
2. “The parts must arrive on March 30”
3. “Do you take credit cards?”

**Proof Of Concept**

- **Reco**
  - English
  - Mandarin

- **Translation**
  - English Results, w/Location, Information

**RT Mobile Collaboration**

1. SMS Translation
2. MMS Translation
3. Mobile Sametime
4. RSS Feeds
5. Voice Search
Translation improves Office Collaboration

**Challenge**
Collaborate with companies, suppliers, customers in their native language in real time

**Solution**
A set of office collaboration translation tools and applications that provide real time translation of data and communications.

**Business Value**
- Customer satisfaction, faster response times
- Reuse of critical skills across geographies and languages.

**Information is perishable!!**
Translation enables Speech to Speech Collaboration

**Challenge**

How can we breakdown the language barrier to communicate critical and some times private information in real time.

**Solution**

Speech to Speech translation

**Business Value**

- Customer satisfaction, Users interact with contact center agents in real time using real time multilingual chat.
- Reuse of critical skills across geographies and languages.

RT Speech to Speech Collaboration

1. Tele conferencing
2. STST v/VoIP
3. PDA

- Doctor patient interviews
- S2S with VoIP
- Transcriptions of meetings
- Agent Assistant
RTTS Translation Suite - Software as a Service model

1. SMS Translation
2. MMS Translation
3. Mobile Sametime
4. RSS Feeds
5. Voice Search

RT Mobile Collaboration

1. ML Chat
2. Documents/Files
3. E-mail
4. URL’s

RT Office Collaboration

RT Speech to Speech Collaboration

1. Tele conferencing
2. STST v/VoIP
3. PDA

Gain Access to New Markets
Companies must be able to gain access to new markets easily, and collaborate with far-flung employees, partners, and suppliers to provide innovative offerings that are relevant and valuable anywhere in the world. Remove the language barrier.

Lower Costs
Managing business communications today across geographies and language barriers has become increasingly time consuming, complex, and costly.

Improve Business Efficiencies
Maximize business efficiency by communicating the right information to the right people at the right time to address specific business or personal challenges without language being a barrier.
Real Time Translation as a Service requires a robust and integrated platform

- Accessible across multiple communication channels
- Scalable, Secure, Reliable
- Multi-channel Support
- Built on Open Standards
  - Web Services interface
  - SOA and J2EE tooling for application development
- Extensible
  - UIMA implementation of open source formats, languages and domains

- Support for Text-to-Text, Speech-to-Text and Speech-to-Speech translation across multiple languages and conversational domains
- Built-in support for multiple translation and speech recognition components
Conclusion

- Where there is the need for Speech there is the opportunity for translation.
- Speech plays a key role in enhancing translation solutions in mobile application.
  - Phone keypad is not the best text entry device. Speech is natural with a cell phone.
- Accuracy is improved with a focus on domains.
- Translation Software as a Service is a very good fit for business process integration and pay as you go model.
- Translation is critical to help companies shift from multinational to global.
Thank You